Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A computer-executable method for grouping one or more interested objects in a directory system based on their corresponding accesses patterns with regard to other objects, the access pattern of an interested object being defined by other objects which the interested object has accessed or by which the interested object has been accessed, the method comprising:

putting each interested object in a singleton cluster, the singleton cluster having only one such object member; and

merging first and second singleton clusters into a third cluster if a ratio between an access pattern in terms of objects associated with each of the first and second singleton clusters and a combined access pattern associated with the third cluster (the " Access Ratio") conforms to a predetermined threshold,

wherein the step of merging is repeated until no more clusters can be merged.

2. (Currently amended) The method of claim 1 further comprising modifying each cluster, after no more clusters can be merged, if at least one of ~~it's~~ the cluster's objects' access activities has changed the corresponding access pattern associated with the object such that the Access Ratio associated with the cluster does not conform to the predetermined threshold.

3. (Original) The method of claim 2 further comprising:

removing the object causing the non-conformance of the predetermined threshold from its cluster into a fourth singleton cluster; and

merging the singleton cluster with other clusters to form additional merged clusters if Access Ratios of the additional merged clusters conform to the predetermined threshold.

4. (Original) The method of claim 1 wherein the access pattern of the interested object is stored as a working set containing one or more other objects.

5. (Original) The method of claim 4 wherein the working set contains a predetermined number of other objects most recently accessed by or having accessed the interested object, which are not redundant among themselves.

6. (Original) The method of claim 1 further comprising determining an access list of each cluster after all the mergers have been done.

7. (Original) The method of claim 6 further comprising determining an association list of each cluster containing one or more clusters that share one or more objects therewith.

8-9 (Canceled)

10. (Currently amended) Computer-executable instructions ~~Functional data~~ for grouping one or more interested objects in a directory system based on their corresponding access~~es~~ patterns with regard to other objects, the access pattern of an interested object being defined by other objects which the interested object has accessed or by which the interested object has been accessed, the functional data comprising instructions for:

putting each interested object in a singleton cluster, the singleton cluster having only one such object member; and

merging first and second singleton clusters into a third cluster if a ratio between an access pattern in terms of objects associated with each of the first and second singleton clusters and a combined access pattern associated with the third cluster (the "Access Ratio") conforms to a predetermined threshold,

wherein the merging is repeated until no more clusters can be merged.

11. (Currently amended) The computer-executable instructions ~~functional data~~ of claim 10 further comprising modifying each cluster, after no more clusters can be merged, if at least one of ~~it's~~ the cluster's objects' access activities has changed the corresponding access pattern

associated with the object such that the Access Ratio associated with the cluster does not conform to the predetermined threshold.

12. (Currently amended) The computer-executable instructions ~~functional data~~ of claim 11 further comprising instructions for:

removing the object causing the non-conformance of the predetermined threshold from its cluster into a fourth singleton cluster; and

merging the fourth singleton cluster with other clusters to form additional merged clusters if Access Ratios of the additional merged clusters conform to the predetermined threshold.

13. (Currently amended) A computer system having a plurality of instructions for grouping one or more interested objects in a directory system based on their corresponding accesses patterns with regard to other objects, the access pattern of an interested object being defined by other objects which the interested object has accessed or by which the interested object has been accessed, the system comprising ~~means for~~:

instructions for putting each interested object in a singleton cluster, the singleton cluster having only one such object member; and

instructions for merging first and second singleton clusters into a third cluster if a ratio between an access pattern in terms of objects associated with each of the first and second singleton clusters and a combined access pattern associated with the third cluster (the " Access Ratio") conforms to a predetermined threshold,

wherein the step of merging is repeated until no more clusters can be merged.

14. (Currently amended) The system of claim 13 further comprising ~~means~~ instructions for modifying each cluster, after no more clusters can be merged, if at least one of ~~it's~~ the cluster's objects' access activities has changed the corresponding access pattern associated with the object such that the Access Ratio associated with the cluster does not conform to the predetermined threshold.

15. (Currently amended) The system of claim 13 further comprising ~~means~~ instructions for:

removing the object causing the non-conformance of the predetermined threshold from its cluster into a fourth singleton cluster; and

merging the fourth singleton cluster with other clusters to form additional merged clusters if Access Ratios of the additional merged clusters conform to the predetermined threshold.

16. (Currently amended) The system of claim 13 further comprising instructions for providing a working set containing one or more other objects representing the access pattern of the interested object.

17. (Original) The system of claim 16 wherein the working set contains a predetermined number of other objects most recently accessed by or having accessed the interested object, which are not redundant among themselves.

18. (Currently amended) The system of claim 13 further comprising instructions for providing an access list of each cluster after all the mergers have been done containing all objects being accessed by the objects in the cluster or objects having accessed the objects in the cluster.

19. (Currently amended) The system of claim 13 further comprising instructions for providing an association list of each cluster containing one or more clusters that share one or more objects therewith.

20. (New) A computer-executable method for grouping objects in a computer directory system based on an access pattern of each object, wherein the access pattern identifies other objects that have accessed the object or have been accessed by the object, the method comprising:

selecting first and second singleton clusters from a plurality of singleton clusters, wherein each singleton cluster contains only one object;

performing an access ratio test based on the first and second singleton clusters, wherein the access ratio test indicates whether a ratio of an access pattern of objects contained in the first

and second singleton clusters and a combined access pattern associated with a group cluster that would be formed by merging the first and second singleton clusters conforms to a predetermined threshold;

merging the first and second singleton clusters to form the group cluster if the access ratio test indicates that the first and second singleton objects should be merged; and

repeatedly performing the access ratio test based on a pair of singleton clusters, a pair of group clusters, or a pair of singleton and group clusters, and merging each pair that the access ratio test indicates should be merged until all pairs indicated by the access ratio test as able to be merged have been merged.

21. (New) The method of claim 20 further comprising:

identifying a change in the access pattern of an object contained in a singleton or group cluster; and

removing the object from the singleton or group cluster if the access ratio of the cluster no longer conforms to the predetermined threshold due to the change.